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The Northwest Territories' Epidemiology Newsletter

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A Growing Research Base for FASD in the NWT

Health and Social Services, 2007

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Part 2

(Part 1 can be found in Volume 19 issue 2)

Research Influences on Territorial Strategies

In 2006, the Department of Health and Social Services for the Government of the Northwest Territories (GNWT), initiated the task of developing a Territorial Fetal Alcohol Spectrum Disorder (FASD) strategy. The foundation for the priorities in the draft strategy were largely formed through input that was gathered at a Territorial FASD conference held in Yellowknife in 2005. The knowledge base shared at the conference spanned evidenced based research on diagnoses and support as well as community demonstrated practices for collaboration and support. Within the NWT, the inclusion of both academic research practices and acceptance of community knowledge and experience advances progress as local leaders possess much knowledge of best practice in a northern context.

To advance the development of the strategy, the next stages are consultation and research based. Broad areas of focus have been established such as education and awareness, prevention of children born with FASD, diagnostics, and intervention and support. In each of these areas, there are plans for determining further data to inform planning, implementation of best practices grounded in research, and evaluation of practice to inform future directions.

Data Influencing Strategy Development

As there is no baseline prevalence data for FASD or early childhood developmental delays available for the NWT to date, identification of the extent of FASD is a challenge to overcome to substantiate priority and practice.

Although there is no known safe amount of alcohol during pregnancy, research demonstrates the potential for FASD is impacted by the amount of consumption and the timing. In comparing the 2002 NWT Drug and Alcohol Survey results to the 2006 data, the frequency of alcohol consumption for those drinking during pregnancy has not reduced. In both 2002 and 2006, 4% of women surveyed reported drinking during their last pregnancy. However, in 2002, 37.7% reported drinking more than once a month. In 2006, 47.2% reported drinking more than once a month.

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HOW TO REACH
EPINORTH

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Editor's Notes:

Janet Hopkins, Managing Editor, EpiNorth, Department of Health and Social Services

Welcome to another issue of EpiNorth. This issue brings a variety of health related topics along with our fall reminder to help ourselves and our families stay healthy by getting a flu shot.

Lindsay Beck BSc. Summer Student, Stanton Territorial Health Authority provides an update on the Influenza Vaccine Program for the NWT 2007/2008 reminding everyone that it is time of year to think seriously about "the flu" and that immunization is the most effective means to reduce the impact of influenza.

Ryan Mazan, Senior Health Analyst, Department of Health and Social Services, provides a statistical analysis of the trends in female alcohol consumption in the NWT.

Shannon Watson and Colleagues, Prevention Services, Department of Health and Social Services provide part two of A Growing Research Base for FASD in the NWT FASD is a lifelong disability. Early diagnosis, supportive environments and a range of special supports and services assist individuals and their families in improving outcomes and maximizing the potential of affected individuals. As there is no baseline prevalence data for FASD or early childhood developmental delays available for the NWT. Identification of the extent of FASD is a challenge to overcome in order to substantiate priority and practice.This article provides detailed information on the development and implementation of a Territorial FASD strategy.

Julie Zalan, Disease Registries Project Officer and Maria Santos, Territorial Epidemiologist, Department of Health and Social Services, provide an article on Sudden Infant Death Syndrome (SIDS). SIDS, often called "cribdeath", refers to the sudden and unexpected death of an apparently healthy infant less than one year of age. This article provides an indepth look at SIDS throughout Canada and the NWT, with special emphasis on risk prevention strategies.

Helen MacPherson, Senior Disease Registry Officer, provides an update on the Incidence of Disease in the NWT.

As always we invite your comments or suggestions regarding articles that appear in Epi-North.

THE EDITOR WELCOMES ARTICLES WITH NWT RELEVANCE FROM ANY AUTHORS. IF YOU WOULD LIKE TO SUBMIT AN ARTICLE, PLEASE CONTACT THE EDITOR FOR MORE INFORMATION AT EPI_NORTH@GOV.NT.CA

Continued from page 1

The frequency implies a significant portion of high risk pregnancies that could benefit from prevention strategies.[1,2]

For use in consideration of intervention and support strategies, there is NWT data on hospitalization and rehabilitation utilization rates for 96 children with FASD and a reference group of 96 children without FASD. The study found that 41% of the FASD group was hospitalized as compared to 19% in the non-FASD group, and 85% of the FASD group required rehabilitation services compared with 12% in the non-FASD group.[3] This evidence demonstrates both service needs for children as well as an area requiring further research to determine a role for preventative programming, follow up support, and the ability of current services to meet the demand and needs of children presenting for intervention.

Research Advancements through Strategy Implementation

The continued development of a territorial strategy, will involve consultation with stakeholders including non-government organizations, aboriginal groups, health authorities, government departments, families, and researchers. The consultation process will continue to identify NWT knowledge on FASD and areas for further research.

Research knowledge will be enhanced through actions that expand NWT capability to provide diagnoses, collect data on diagnosed individuals, and identify service and support needs of individuals. Processes for the collection and distribution of this knowledge will be carefully determined. Continued research will be emphasized in the collection and distribution of best practice knowledge for all prioritized areas. Additionally, local information collection continues through NWT asset mapping projects in all regions to provide information on services, supports, and networks that are existing. The synthesis of this information will provide a stepping stone for delivery of program enhancements.

As consultation continues, the expectation is for stakeholders to identify further research needs and the NWT researchers to participate in cross jurisdictional projects. The ability to identify research needs, partner and deliver research will be possible through the communication and networking components of the strategy and its implementation.

Program Delivery

Prevention, intervention, and support programming in the NWT is still developing but has demonstrated use of best practice knowledge while incorporating northern experience. Knowledge is shared through networks on the development and subjective impacts of the initiatives to other regions for use in program design. These programs could potentially contribute to a research knowledge base that identifies effective implementation practices, northern considerations, and outcomes in a northern context.

Northern Examples of Best Practice Implementation
Prevention

Recently, Health and Social Services implemented the development of a FASD risk screening tool based on widely accepted best practice principles. The T-ACE screening tool assesses 4 key areas which are strong indicators of problematic alcohol use:

- **T**olerance (how many drinks it takes for a woman to feel "high")
- **A**nnoyance (whether she has ever felt annoyed due to others criticizing her drinking)
- **C**ut Down (whether she has ever felt herself that she ought to cut down on the amount of alcohol she drinks)
- **E**ye Opener (whether she has ever had to have a drink first thing in the morning)[4]

The T-ACE card, written in plain language, is simple, quick and easy to use. In 4 simple questions, it screens a woman for her level of risk for having a baby affected by FASD. The tool provides health care professionals with an easy means of determining whether a woman needs additional support during her pregnancy in order to abstain from alcohol use. To make it more universally and culturally appropriate, the card will be translated into all NWT official languages and placed on the Health and Social Services Website.

Intervention and Support

The NWT has a variety of educational, rehabilitation, and program supports. Two programs which can be highlighted as based on FASD best practice or evidence based principles are run by the Yellowknife Association for Community Living (YACL). The Parent Empowerment Program and the Peer Support Program resulted from an asset mapping workshop conducted in Yellowknife in 2006. Asset mapping is a process by which the available and beneficial resources in a community are identified and then planning occurs related to how to strengthen those existing resources and networks as well as for how to fill any gaps that exist.[5]

The Parent Empowerment Program is built upon evidence based, best practice principles that children affected by FASD have better outcomes if they reside in a stable and supportive home. This type of home environment can be achieved by providing respite and other support to parents and caregivers as well as FASD specific training.[6]

The Parent Empowerment Program provides a place where parents can come together for support, encouragement, education and information about parenting children affected by FASD. It is also a place where they can access information on resources available to them and their children as well as to access culturally relevant parenting information. Incorporating cultural relevance is cited by Health Canada as best practice in FASD programming, particularly in relation to client retention.[6]

The Peer Support Program for adolescents and young adults affected by FASD is a valuable program based on many evidence based principles as laid out by Health Canada.[6] Research on outcomes for children affected by FASD shows that many adolescents and adults are affected by difficulties in school, legal problems, drug and alcohol issues and employment problems. Many are also unable to live independently due to a basic lack of life skills.[7] The Peer Support Program helps offset these difficulties by providing young adults affected by FASD with life skills and support needed to avoid or lessen future difficulties. The program educates on relevant skills such as problem solving, conflict management, cooking/nutrition, and coping strategies, as well as works with participants on issues such as sex education, drugs and alcohol, and making academic and vocational decisions.

The Peer Support program identifies a contributing success factor as the manner in which it builds self esteem and self confidence in the participants. It shows the participants that with support, guidance, and skills, they can achieve their full potential and avoid unnecessary difficulties in life.

Conclusion

As the NWT research knowledge base grows and expands, further programming will incorporate efficiencies into new and existing programming, and implemented programs continue to share knowledge with other regions of the NWT. The linking of program staff with research projects and investigators potentially connected with the Canada Northwest Fetal Alcohol Spectrum Disorder (CNFASD) Research Network will continue to develop opportunities for collaboration, new research projects, and inclusion of northern expertise in research design and implementation.

As the Territorial FASD strategy advances through stakeholder consultation, the impacts of research on programming will be incorporated and the identified areas for continued research and collaboration will continue to be highlighted. The NWT has vast community, medical, educational, justice, support, and research knowledge to contribute, collect, and share for the enhancement of a knowledge base on FASD across the NWT.

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Sudden Infant Death Syndrome

Julie Zalan, Disease Registries Project Officer, HSS
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Introduction

The words Sudden Infant Death Syndrome (SIDS) can strike a feeling of anxiety and fear in parents each time they put their child down to sleep. No one yet knows why a seemingly well baby dies so suddenly, so unexpectedly. SIDS, often called "crib death", refers to the sudden and unexpected death of an apparently healthy infant less than one year of age.[1] Such deaths remain unexplained even after a complete investigation has been performed: an autopsy, an examination of the circumstances of the death and a review of the case history. SIDS, which is rare before one month and after one year of age, peaks at 2 to 4 months.[1,2,3] In Canada, SIDS is still the leading cause of postneonatal mortality.[4] Each week, it takes the lives of three babies. However, SIDS rates have been declining in many countries, including Canada. This decline has been largely attributed to education and awareness campaigns focusing on risk prevention. In 1993, Health Canada, the Canadian Pediatric Society, the Canadian Foundation for the Study of Infant Deaths (CFSID), and the Canadian Institute for Child Health released their first joint statement on reducing the risk of SIDS.[5] Many risk factors have been identified and current research continues to explore potential genetic and environmental causes. This review focuses on the epidemiology of SIDS, current risk factors and proposes new recommendations for further SIDS risk reduction strategies.

Epidemiology

Despite a decline of almost 50% in SIDS rates in Canada, the United States and many other countries, SIDS continues to be the leading cause of postneonatal infant death, accounting for about 25% of all deaths between 1 month and 1 year of age.[6] In 1994-1998, Quebec and British Columbia had the lowest postneonatal SIDS rates at 0.38% and 0.41% respectively[5] while the Yukon and the Northwest Territories (which included Nunavut at the time) had the highest rates at 2.26% and 2.18% respectively. The postneonatal rates of mortality due to SIDS represent the proportion of infants who died in the postneonatal period among neonatal survivors in the same period.

During 1997-2006, the incidence of SIDS in the Northwest Territories remained relatively constant with an average of 0.7 cases/year, for all deaths less than 5 years of age.[7] From a cohort of 37 children, who died < 5 years of age, 19% of deaths were attributed to SIDS (Figure 1). In Canada, SIDS cases have decreased from 121, or 5.9%, of deaths in <under 5 years of age in 2000 to 84, or 4.1%, in 2004[4] (Figure 2). According to the Chief Coroner of the NWT, this decrease may be artifactual due to different acronyms being used throughout jurisdictions, for example, sudden unexpected death in infancy (SUDI) and sudden and unexplained death syndrome (SUDS). As well, this decrease could in part reflect the reclassification of SIDS. In the NWT, only the term SIDS has been used consistently.

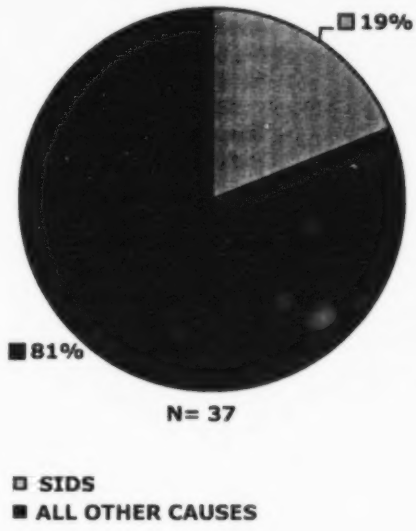

Figure 1. Percentage of child deaths <5 years of age in the NWT (1997-2006)

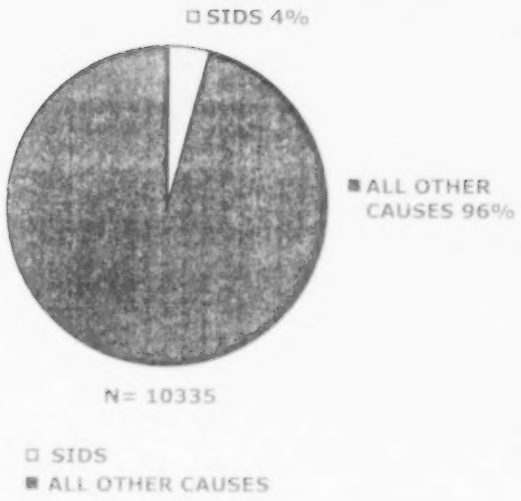

Figure 2. Percentage of child deaths <5 years of age across Canada (2000-2004)

Every ethnic, social and economic class is susceptible; nevertheless in certain groups incidence rates tend to be higher. Identified risk factors include:

- lower socioeconomic status,
- younger maternal age,
- single marital status and;
- lower maternal education, are associated with an increased risk of SIDS.[8]

SIDS is three times more likely to occur in male infants than females.[9] While the data on SIDS among Aboriginal peoples is limited, Aboriginal infants tend to have a risk that is three to four times higher than the risk to non-Aboriginal infants.[10,11]

The Child and Youth Fatality Review Committee (C&YFRC) was formed in 1995 to address all deaths of children between the ages of 8 days to 18 years of age in the Northwest Territories. Members of the C&YFRC include: the Chief and Deputy Chief Coroners, pediatricians, registered nurses, as well as representatives from the Department of Health and Social Services; Child and Family Services, Population Health and Policy, Legislation and Communication. After thorough review, there were no cases of SIDS reported between 2001 and 2004. However, cases have been reemerging in the NWT since 2005. Reasons as to why have not yet been determined. SIDS should still be identified as a cause for concern in the North and recommendations have been made to discuss SIDS more frequently within the Northern population. Certain risk prevention strategies need to be practiced and parents need to remember to enforce these preventative measures at home.

Infant sleep practices and environment

Good sleeping habits are important to the baby's physical health and emotional wellbeing. Foremost among risk factors for SIDS, is sleeping in the prone position (on the stomach).[1,2] Numerous studies have found a higher incidence of SIDS among babies placed in the prone position than among those sleeping on their backs or sides.[13] The Public Health Agency of Canada (PHAC) and CFSID recommend that healthy infants be placed in the supine position (on their backs) for sleep. Sahni *et al.* emphasized that fewer arousals in prone sleeping position may in part explain the increased vulnerability to SIDS.[8] Preterm and term infants are less responsive to external stimuli in the prone position with longer intervals between successive arousals.

Recommendations previously made regarding the side-lying position are under debate.[13,14] Infants placed on their sides are twice as likely to die of SIDS as infants sleeping supine,[2,8,14] due to an increased chance of rolling into a prone position during their sleep. In a recent survey conducted by Health Canada and Environics, 71% of parents and caregivers reported putting their babies to sleep on their back, up significantly from 40% before the launch of the Back to Sleep campaign initiated by CFSID in 1999.

Many parents fear that babies put to sleep on their backs could choke. According to Health Canada, however, there is no increased risk of choking for healthy infants who sleep on their backs.[15] For infants living with an underlying medical condition, sleeping on their stomach may be the better option. It is important for parents to discuss their infant's particular needs with their doctor. When babies learn to turn from back to tummy on their own – usually around 4 to 7 months – it is safe to let them sleep in any position they want.[1,15]

The factors that influence the sleeping arrangements of infants are a combination of parental values, socioeconomic factors and cultural diversity. The practice of bed sharing is not uncommon in society and remains the routine sleeping arrangement in most of the world's traditional[16] and aboriginal cultures. Bed sharing between an infant and adult has been a highly controversial topic in reference to SIDS. Recently, the Ontario's deputy chief coroner, James Cairns, released a report strongly recommending that parents refrain from sleeping in the same bed as their infant children. Although there are proven benefits in facilitating breastfeeding and maternal-infant

bonding,[2] epidemiological studies on bed sharing have shown that it can be hazardous under certain conditions. The risk is high when one or both parents smoke, there are multiple bed sharers (including younger siblings), and one or both parents have consumed alcohol or arousal-altering medications.[9] According to Lahr *et al.*[17] large case-control studies have reported the association between co-sleeping and SIDS. They provided epidemiological evidence showing that there is little or no increased risk for SIDS among infants of nonsmoking mothers but increased risk among infants of smoking mothers. There is also an increased risk for premature infants of nonsmoking mothers. Bed sharing is to be discouraged among all infants less than 11 weeks old .

If parents choose to bed share they should avoid sleeping on a couch, sofa, armchair or waterbed as this can be extremely dangerous.[9,17] Soft and old mattresses as well as soft, fluffy bedding such as comforters, pillows, sheepskins and polystyrene-bean pillows have been associated with a 2-3 fold increased risk of SIDS.[6] These soft and loose materials risk covering the face and head of infants and should be discouraged. A combination of these risk factors, increase the risk of SIDS. One study demonstrated a 20-fold increased risk of SIDS when prone sleeping was practiced in soft bedding.[18] Similarly, studies have identified an interaction between overheating and prone sleeping, with overheating increasing the risk of SIDS 6-10 fold among infants who sleep in the prone position.[6] Williams *et al.* revealed a correlation between a false temperature assessment; dressing an infant using clothes and bedding for a bedroom temperature of 3.5ºC lower than the actual temperature, with an increased risk of SIDS.[19] Overbundling should be avoided, and the infant should not feel hot to the touch. CFSID has recommended using a thin sheet tucked tightly around the baby, secured under a firm mattress, while ensuring the infant's feet are at the bottom of the crib to prevent the infant from sliding under. The safest place for an infant to sleep may be in the parent's bedroom in a separate crib for the first 6 months of life.[2]

Substance Abuse

A smoke-free drug-free environment is recommended for infants before and after birth. Maternal smoking during pregnancy has emerged as a major risk factor in almost every epidemiological study of SIDS. Anderson *et al.*[20] concluded mothers should be informed of the increased rate of SIDS associated with maternal cigarette use. In a separate study published by CFSID, lung tissue analyzed from infants who died of SIDS had significantly higher levels of nicotine than non-SIDS infants.[1] Smoking by fathers and other family or household members is also believed to be associated with an increased risk of SIDS, although the evidence is not always consistent across studies.[28] Drug use is also detrimental. Among infants who died of SIDS, parental drug use was common, including cigarette smoking (61% of infants), alcohol use (29% of infants), and illicit substance use (15%); overall, 68% of infants had a parent with a documented history of any drug use.[21]

Genetic Risk Factors

Genetic studies have tried to correlate the occurrence of SIDS with specific alleles, of different genes (scientific terminology is defined in Table 1). The genes implicated in SIDS are involved in an array of areas: cardiac ion channelopathies, autonomic nervous system development, and infection/inflammation responses.[6] Genes involved in brainstem abnormalities have also been linked as contributing factors to SIDS. The serotonergic 5-HT system helps regulate autonomic and respiratory functions.[22] Recent evidence has indicated dysfunction of this serotonergic system in the pathway leading to autonomic dysregulation and a subsequent vulnerability to SIDS.[23] Rand *et al.* revealed an intronic insertion mutation found exclusively in SIDS cases.[22]

Long QT syndrome, a cardiac disorder, is associated with sodium and potassium channel polymorphisms.[6,24] It is estimated that 5%-10% of SIDS cases are associated with a defective cardiac ion channel causing syncope, seizures and an increased potential for a lethal arrhythmia.[6,24] Mutational analysis has identified more than 100 distinct mutations, of which more than 30 are associated with long QT syndrome.[14]

Both activation of the mucosal immune system and elevated levels of interleukin-6 in the cerebrospinal fluid of SIDS cases have been demonstrated.[24] A polymorphism in the gene promoter region of Interleukin-10 (IL-10), an inflammatory cytokine, has also been reported in SIDS infants. This polymorphism resulted in decreased IL-10 levels – which could lead to decreases in antibody production or increases in inflammatory cytokine production. SIDS victims with mild upper respiratory infection prior to death were more likely to have a deletion of either the C4A or the C4B gene when compared with SIDS victims without infection or living controls.[24]

This interaction between prior illness and an underlying genetic vulnerability are 2 components of the triple risk hypotheses:

1) an underlying vulnerability,

2) an exogenous stressor
(e.g. prone position, smoking) and;

3) the critical development period - the first 6 months of life when the infant is at greatest risk for SIDS.[22,25] This susceptibility demonstrates the critical relationship between environmental and genetic contributions.

***Table 1.* Terms and Definitions**

- **Allele** – any of the possible forms in which a gene for a specific trait can occur. It is any one of a number of viable DNA codings that occupies a given position on a chromosome
- **Intron** – a segment of a gene situated between exons that is removed before translation of messenger RNA and does not function in coding for protein synthesis
- **Intronic Insertional Mutation** – a mutation located within the intron of a gene
- **Polymorphism** – describes multiple possible states for a single property. A variation in the sequence of genetic information on a segment of DNA among individuals. A polymorphism must have a frequency of at least 1% in the population

Reducing the risk of SIDS

Since the initiation of the Back to Sleep campaign in 1999 by CFSID, there has been a dramatic decrease in the incidence rates of SIDS. This decline is highly attributable to education and awareness campaigns focusing on certain modifiable risk factors: prone and side sleeping positions, smoking and bed sharing. However, SIDS is still the leading cause of postneonatal infant death in Canada. Despite greater public compliance, there is room for improvement in how effectively and consistently risk reduction guidelines are disseminated within the population. Families from all social, cultural and economic backgrounds need to ensure that they continue to practice these preventative strategies. Physicians and nurses need to enforce these procedures at the hospital commencing immediately after birth. Parents are more responsive to these messages when there is consistency in the information coming from healthcare providers and when these providers are observed practicing proper etiquette themselves.[3] Culturally sensitive communication is essential.

Strategies have been made regarding new preventative measures. Pacifiers and breastfeeding have been recognized as providing protective barriers against SIDS.[3,6,18,26,27] Hauck et al. noted pacifier use was found to lower the risk of SIDS substantially by 61%.[18] Some practitioners and parents worry about potential adverse effects, such as interference with breastfeeding and otitis media inflammation of the middle ear.[6] To prevent overuse and dependence, it has been recommended that pacifiers only be offered to infants when being placed down to sleep, including daytime naps and nighttime sleeps.[27] To ensure proper breastfeeding practice, pacifier use should begin after the neonatal period (after breastfeeding is established).[3] Recommendations include pacifier use for infants up to 1 year of age, which encompasses the peak age for SIDS risk.

The First Nations and Inuit Health Branch of Health Canada has been working with Aboriginal organizations and communities to reduce SIDS and will continue to do so through the Maternal and Child Health Program. Despite declines in SIDS across all social and racial groups following educational campaigns, recent trends reveal that social and racial disparities are increasing.[8] To better understand the disparities in SIDS risk reduction behaviors, studies have been conducted[12] focusing on the effectiveness and consistency of the dissemination of risk reduction guidelines among population groups.

Helpful guides are available from the local Public Health Unit and prenatal unit at Stanton Territorial Hospital. The Best Beginning Book, which is an easy-to-read book about pregnancy, birth and the newborn, is given to all new mothers after delivery. This book is maintained with the most current information on SIDS and is reviewed with a Public Health Nurse after discharge from the hospital. Additional information is available by calling Telecare NWT and speaking with a registered nurse over the phone.

Summary

Physiological, genetic and environmental interactions constitute the risk factors of such a complex and multifactorial disorder – SIDS. Research is continually making progress on identifying causes; while epidemiological evidence based on current research has helped to reduce the incidence of SIDS.

Through SIDS education and awareness campaigns, current risk factors can be avoided and safe-sleeping practices can be mastered. Greater dissemination of these guidelines, in a culturally sensitive format, must be continued with increased efficacy and efficiency reaching all population groups. Health Canada, the Canadian Pediatric Society, CFSID and the Canadian Institute for Child Health offer support to families of

babies who have died from SIDS and will continue to provide best infant care practices for the health and safety of infants and children across Canada. The C&YFRC want to ensure that all Northern communities are aware of SIDS, the CFSID and have educational material available which is current and suitable for their individual needs. They will continue surveillance of SIDS in the North, while emphasizing the importance of risk prevention strategies and follow-up support for Northern families.

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Women at Risk: Alcohol Patterns among Women Aged 15 to 44 Years, NWT 1996 – 2006

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Introduction

Fetal Alcohol Spectrum Disorder (FASD) is a broad term describing a range of effects that can occur in an individual whose mother drank alcohol during pregnancy. These effects may include permanent and irrevocable physical, mental, behavioral and learning disabilities (Dell and Roberts 2005). The objective of this paper is to outline trends in the drinking patterns of NWT women aged 15 to 44 between 1996 and 2006. Drinking patterns among women of the childbearing ages are considered one of the main risks associated with FASD (Chudley et al. 2005). Generally, the paper addresses trends in *potential risk* (i.e. those who drink alcohol and are not pregnant) and *actual risk* (i.e. those who reported drinking alcohol while they were pregnant). All data on alcohol use patterns in the NWT are taken from surveys conducted in 1996, 2002 and 2006.[1]

Women at potential risk

Potential risk is an important factor in the etiology of FASD because approximately 40% of all pregnancies are unplanned (Dell and Roberts 2005). For instance, a woman may not realize she is pregnant and continue to drink alcohol. She thus unintentionally puts her unborn fetus at risk of developing the signs and symptoms associated with FASD. This issue makes it important to monitor drinking patterns of women in the childbearing ages and assists with identifying the level of potential risk in the population.

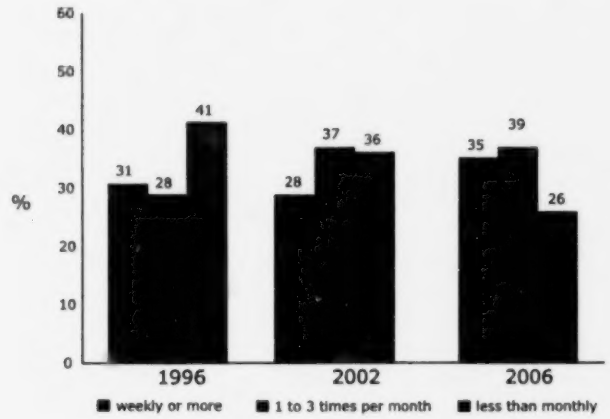
Table 1. Proportion of current[1] drinkers among women aged 15 to 44, NWT 1996 – 2006

Age	1996	2002	2006
15-44	83	81	76
15-24	90	86	78
25-44	80	79	75

[1]Current drinkers – drinking alcohol in the year preceding the survey.

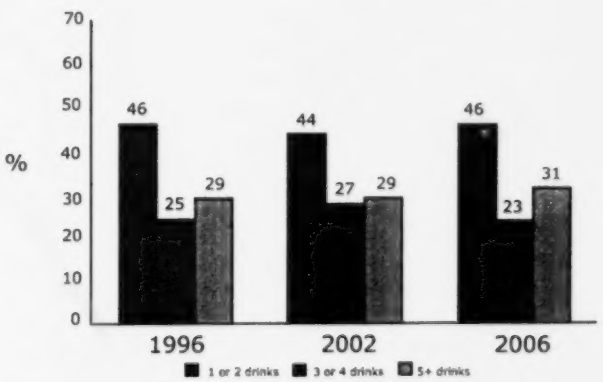
There has been a change in alcohol use trends over the past 10 years. The proportion of current drinkers (i.e. consumed alcohol in the year preceding the survey) declined from 83% to 76% between 1996 and 2006 (see Table 1). The proportion of current drinkers among 15 to 24 year olds declined from 90% in 1996 to 78% by 2006 (or by 13%). Additionally, the proportion declined by 6% among 25 to 44 year olds (from 80% to 75%).

Figure 1. Frequency of drinking among female current drinkers aged 15 to 44, NWT 1996-2006



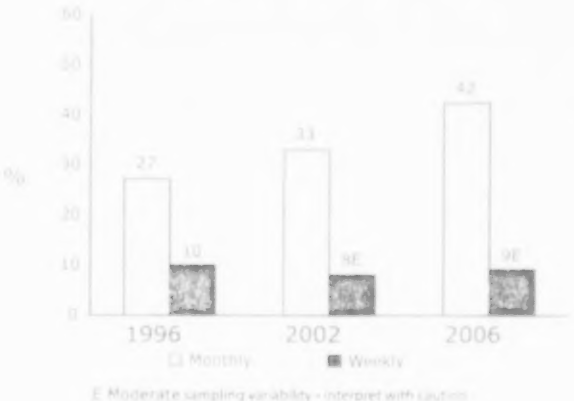
Although the overall proportion of current drinkers declined, other indicators of consumption reveal a different picture. Current drinkers were asked how often they drink alcoholic beverages and how many drinks they usually had in one sitting (*see Figures 1 and 2*). The frequency of alcohol use shows an interesting trend. By 2006, an increased proportion of current drinkers were consuming alcohol weekly or more (35%) and 1 to 3 times per month (39%), while the proportion drinking less than monthly had declined by 37% (or from 41% to 26%). The usual amount of alcohol consumed in a single sitting among current drinkers has changed little over the past 10 years. Approximately 46% of current drinkers reported consuming 1 or 2 drinks whereas, 31% reported consuming 5 or more drinks on a single occasion.

Figure 2. Usual number of drinks among female current drinkers aged 15 to 44, NWT 1996-2006



The consumption of five or more drinks on one occasion is considered a reliable indicator of heavy or binge drinking (*see Figure 3*).[8] The proportion of current drinkers age 15 to 44 years who reported consuming five or more drinks at least once per month increased from 27% to 42% (or an increase of 56%) between 1996 and 2006.[9] The percentage reporting heavy drinking at least once per week has been stable at around 9% over the past 10 years.

Figure 3. Heavy monthly and weekly drinking (5+ drinks) among female current drinkers aged 15 to 44, NWT 1996-2006



E Moderate sampling variability - interpret with caution

Table 2. Heavy drinking at least once per month among female current drinkers aged 15 to 44, NWT 1996 - 2006

Age	1996	2002	2006
15-44	27	33	42
15-24	37[E]	50	57
25-44	22	25	35

E Moderate sampling variability - interpret with caution.

The proportion of monthly binge drinkers tends to decline with age (*see Table 2*). Namely, 15 to 24 year olds are more likely to binge drink than 25 to 44 year olds with an average of 1.8 times the likelihood over the past 10 years. However, both age groups have shown a marked increase in binge drinking. For 15 to 24 year old women, the proportion of monthly binge drinkers increased from 37% to 57% (or by 54%) while, the proportion increased from 22% to 35% (or by 59%) among women aged 25 to 44 years.

Women at Actual Risk

Women who drink during pregnancy are at an actual risk of having a child with FASD. However, the prevalence and incidence rates of drinking during pregnancy cannot be directly associated with those of FASD. The amount (i.e. high blood-alcohol concentration), timing (i.e. stage of pregnancy at which women drink) and frequency of alcohol consumption, along with other factors such as general health and genetic susceptibility of the fetus, are critical factors in determining risk for FASD (Dell and Roberts 2005; Chudley et al. 2005). The complexity of defining FASD and the absence of a congenital anomalies registry currently makes it difficult to determine the rates of FASD in the NWT. Even so, information on drinking during pregnancy provides an indication of the proportion of pregnant women who are at the highest risk of having a child with FASD.

Women aged 20 to 44 were asked whether they drank alcohol during their last pregnancy and if yes, how often and how much. The percentage of women aged 20 to 44 who reported drinking during their last pregnancy increased from 11% in 1996 to 15% in 2002 and has remained stable since (see Table 3). The latest figure is equivalent to the one reported at the national level in 2005 (around 15% of Canadian women). Among the women who reported drinking during their last pregnancy, the percentage of those who drank at least once per week doubled from 16% in 2002 to 34% in 2006.[iv] The amount of alcohol consumed on a single occasion has decreased over the past 10 years. Those who reported consuming one or two drinks increased from 65% to 83% between 1996 and 2006. This trend indicates that women who drank during pregnancy were on average drinking lower amounts of alcohol over time.

Table 3. Drinking during last pregnancy among women aged 20 to 44 years, NWT 1996 – 2006

	1996	2002	2006
Age 20-44	11	15	15[E]
Weekly or more	[F]	16[E]	34[E]
1 to 3 times a month	39[E]	21[E]	[F]
Monthly or less	57	62	53[E]
1 or 2 Drinks	65	67	83
3 or 4 Drinks	25[E]	17[E]	[F]
5+ Drinks	[F]	17[E]	[F]

[E] Moderate sampling variability - interpret with caution

[F] High sampling variability - data was suppressed

Conclusion

The above statistics show that drinking patterns among women aged 15 to 44 years are important issues in the Northwest Territories. Particularly, the prevalence of monthly binge drinking among female current drinkers has increased significantly between 1996 and 2006.

This trend should raise concern because one of the most important risk factors for FASD is linked to high blood-alcohol concentration, which is in turn, linked to binge drinking and the frequency of use. Another concern is that, the prevalence of drinking while pregnant has not declined over the past 10 years. This static trend may indicate that the prevalence of infants born with FASD has not declined.

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Government of Northwest Territories. Health and Social Services. 2006 NWT Addictions Survey.

[1]1996 NWT Alcohol and Drugs Survey, 2002 NWT Alcohol and Drugs Survey, 2006 NWT Addictions Survey.

[2]Note that for women, heavy drinking was defined in the 2004 Canadian Addiction Survey (CAS) as four or more drinks on a single occasion. However, five or more drinks are used here to allow for comparability over time. As such, the estimates derived here will be more conservative than those based on what is now deemed the standard allowable amount for women.

[3]Note that this change may actually be smaller due to the slight difference in the wording of the question asked in the 1996 Alcohol and Drug Survey.

[4]Note that these proportions have moderate sampling variability and should be interpreted with caution. Due to the small number of cases on which these estimates are based, proportions from survey to survey can vary considerably by chance alone.

Influenza Vaccine Program for the Northwest Territories (NWT) 2007/2008

Lindsay Beck, 4th Year Undergraduate- Bachelor of Science, University of Alberta

It's time to think seriously about the flu again

Influenza or "the flu" is a common infectious respiratory disease that, depending on the pervasiveness of the virus, can affect between 10% to 25% of the Canadian population each year. The disease begins in your nose, eyes and throat and is caused by the highly contagious influenza virus, spreading rapidly from person-to-person or by direct contact, through coughing or sneezing, or by hands contaminated with respiratory secretions. It can be serious and deadly. Every year, up to 1,500 Canadians, mostly seniors, die from influenza-related pneumonia and many others die from other influenza related complications such as an aggravation of underlying chronic heart and lung disease.[1]

Immunization is the most effective means to reduce the impact of influenza

The goal of public influenza immunization programs is to prevent serious illness caused by influenza and its complications, including death. The NWT influenza immunization program, similar to last year, advocates that priority be given to:

- those persons at high risk of influenza-related complications;
- those capable of transmitting influenza to individuals at high risk of complications, and;
- those who provide essential community services.

This year, recommendations have been expanded to include all pregnant women in the priority list. Annual vaccine for all Canadians is still encouraged since influenza immunization has been shown to prevent influenza illness in approximately 70% to 90% of healthy children and adults. The recommended time for influenza immunization is the period from October to mid-November and extended during the influenza season, which usually lasts until March. As well, travelers to the Southern hemisphere should be offered influenza vaccine.

The Influenza Outbreak Management Protocol for Long-Term Care Facilities and Home Care will be sent to all Health Care Practitioners in the NWT. The protocol can also obtained at the Office of the Chief Medical Health Officer at 867 920-8646 or at *http://www.hlthss.gov.nt.ca.*

The WHO recommends that the trivalent vaccine for the 2007 2008 season in the northern hemisphere contain:

- A/Solomon Islands/3/2006 (H1N1)-like virus;
- A/Wisconsin/67/2005 (H3N2)-like virus;
- B/Malaysia/2506/2004-like virus.

NOTE: Annual immunization is required: Influenza viruses change over time; immunity attained in one season will not reliably prevent infection by an antigenically drifted strain.

Administration of the influenza vaccine

Influenza vaccines in Canada are available as split virus or inactivated subunit preparations. The vaccine does not contain live virus, therefore, **influenza vaccination cannot cause influenza**. Each 0.5 mL dose of vaccine contains 15 µg of hemagglutinin of each antigen. Children under 9 years of age require two doses of influenza vaccine given 4 weeks apart if they have received one or no doses in the previous influenza season. IMPORTANT: Immunization with currently available influenza vaccines is not recommended for infants < 6 months of age.

Recommended influenza vaccine dosage, by age, for the 2007-2008 season

Age	Vaccine Type	Dose (mL)	# Of Doses
6-35 months	Split- virus	0.25	1 or 2
3-8 years	Split- virus	0.5	1 or 2
≥9 years	Split-virus	0.5	1
≥18 years	Sub-unit or split-virus	0.5	1

Storage: Influenza vaccine should be stored at +2° C to +8° C and should not be frozen.

Contraindications and Precautions:

- Influenza vaccine should not be given to people who have had an anaphylactic reaction to a previous dose.

- Persons with known IgE-mediated hypersensitivity to eggs (manifested as hives, swelling of the mouth and throat, difficulty in breathing, hypotension or shock) should not be routinely vaccinated with influenza vaccine. Egg-allergic individuals who are at risk of the complications of influenza should be evaluated by an allergy specialist, as vaccination might be possible. If such an evaluation is not possible, the risk of an allergic reaction to the vaccine must be weighed against the risk of influenza disease.

- Expert review of the risks and benefits of vaccination should be sought for those who have previously experienced any symptoms that raise concern regarding the safety of re-immunization.

ORS-Oculo Respiratory Syndrome (ORS)

- Individuals who have experienced ORS symptoms, including severe ORS consisting of non-lower respiratory symptoms (bilateral red eyes, cough, sore throat, hoarseness, facial swelling), may be safely re-immunized with influenza vaccine.

- Adults with serious acute febrile illness usually should not be vaccinated until their symptoms have abated. Those with mild non-serious febrile illness (such as mild upper respiratory tract infections) may be given influenza vaccine.

Surveillance in the NWT:

Surveillance System

To identify any ongoing activity, outbreaks, or emerging strains of influenza, the NWT requires a robust surveillance system. Currently there are two communicable disease specialists monitoring influenza activity and five sentinel sites for influenza surveillance.

Immunization Utilization Rates	
15 000	2004/2005
>20 000	2005/2006
15 000	2006/2007

**The overall vaccination rate for the NWT in 2005 was 37% (Personal Communication, Jeff Kwong from National Survey, June 2007).

Between September 2006 and January 2007, influenza activity was generally low compared with the same periods in recent years. This mild flu year, lead to 32 cases of Influenza A and 14 Cases of Influenza B were documented in the NWT. One outbreak occurred in a long-term care facility. It was promptly identified and outbreak protocol was implemented in a rapid timeframe, which included the initiation of Tamiflu (anti-viral). Only one medevac was required and all flu activity was curtailed within a 2-week period thanks to the prompt response of the local long-term care facility.

Our Duty to Care.

The long-term care coverage rate in 2006/2007 for residents was 95-100%. The long-term care facility staff coverage rate five years ago was 33%; it increased to 72% in 2004/2005 and dropped to 62% last year. These stats indicate the need for a reminder to health care and other care providers in facilities and community settings to protect not only themselves but also the residents from influenza. Up to 25% of health care workers (HCWs) get infected with influenza during the winter months. Those that are ill frequently stay at work, but even those who are asymptomatic (up to 50%) can transmit the virus to others.[2] Recent studies in long-term care facilities have shown that immunizing 50% to 60% of staff decreases the risk of death among residents more than 40% and decreases the risk of influenza-like illness by almost 60%. Influenza vaccination has also been shown to significantly reduce respiratory illness and absenteeism among health care and other workers.[2]

In 2005/2006, there were three deaths from influenza and influenza-related complications in the NWT. These deaths occurred in the elderly; all were eligible for immunization, however, none had received the vaccine.

A Call to All Regional Health Authorities: Similar to previous seasons, data on overall vaccine utilization by long-term care residents and staff for each community is required. We would also like to acquire data on utilization rates for ages 6-23 months and ages >65 for each community. A form will be included 2007/08 Influenza Program Package on "Vaccine Coverage Rates for the Young and Old". Please complete the form and return to your nurse manager, all stats are then to be submitted to the Office of the Chief Medical Health Officer.

Frequently Asked Questions:

Q: How long into the season do we continue vaccinating people for Influenza A?

A: Begin vaccinating in late October and continue until February/March. Influenza activity is ongoing there are different strains and waves of disease throughout the season. Note: Travelers can be immunized at any time throughout the year if the vaccine is available.

Q: What is the protocol for vaccinating children?

A: If a child under 9 years old has never had an influenza vaccine OR influenza they should receive two doses of vaccine, four weeks apart. For example, if a five year old was vaccinated at age four, they only receive one vaccine, in the following year.

Q: Should I have my child vaccinated if they have an egg allergy?

A: The child should NOT be vaccinated if there is previous documentation of anaphylaxis. Otherwise, it is safe to administer.

Q: Does repeated annual administration of influenza vaccine impair the immune response of the recipient to influenza virus?

A: The simple answer is no, see the Canadian Immunization Guide 2006 for a more detailed response. http://www.phac-aspc.gc.ca/publicat/cig-gci/index.html

Conclusion:

Recently it seems that our newspapers are filled with reports of various infectious diseases around the world; in all cases, prevention is the key to containing and controlling the spread of these diseases. Immunization is the most effective means to reduce the impact of influenza. Annual influenza programs are not associated with long-term health problems, and have great short-term rewards for individuals and the population as a whole. The best time to get your flu shot is between October and December.[1]

All NWT Communities have developed draft pandemic plans for the health sector.

The annual flu season is good practice for preparing for a pandemic by getting people used to having an annual flu shot and public health staff running mass immunization clinics.

References:
[1]Getting Serious About the Flu. Canadian Health Network-Public Health Agency of Canada
[2]The Importance of HCW Influenza Immunization NWT Health and Social Services. October 2006

NOTIFIABLE Diseases

CUMULATIVE TOTALS for the Northwest Territories (NWT) January - June, 2007

		January - December 2006	January - March 2007
		NWT	NWT
Vaccine Preventable Diseases	Hepatitis B	0	0
	Haemophilus Influenza	3	1
	Influenza A	19	13
	Influenza B	14	0
	Pertussis	2	0
	Chicken Pox	24	8
Sexually Transmitted/ Bloodborne Diseases	Chlamydia	700	348
	Gonorrhea	180	114
	Hepatitis C	21	7
	Hepatitis, Other	0	0
	Syphilis	0	0
Diseases by Direct Contact/ Respiratory Route	Invasive Group A Strep	5	5
	Invasive Group B Strep in neonates	0	0
	Invasive Group B Streptococcus	2	0
	Invasive Pneumococcal Disease	12	9
	Legionellosis	0	0
	Listeriosis	0	0
	Meningitis/Other Bacterial	0	0
	Meningitis/Unspecified	0	0
	Meningitis/Viral	0	0
	Meningococcal Infections	1	1
	Respiratory Syncytial Virus	13	117
	Tuberculosis	6	4
Enteric, Food and Waterborne Diseases	Botulism	0	0
	Campylobacteriosis	9	5
	Cryptosporidiosis	0	0
	E.Coli 0157:H7	0	2
	Giardiasis	8	3
	Hepatitis A	0	0
	Salmonellosis	9	7
	Shigellosis	0	0
	Tapeworm	0	0
	Trichinosis	0	0
	Yersinia	0	0
Vectorborne/ Other Zoonotic Diseases	Brucellosis	0	0
	Malaria	0	0
	Rabies Exposure	5	0
Antibiotic resistant microorganisms	Methicillin-resistant Staph. Aureus	14	14
	Vancomycin-resistant Enterococci	1	0

NWT HIV Infections Reported from 1987 to 2007

	Age at Diagnosis								Gender		Risk Category						
Total	0-9	10-14	15-19	20-29	30-39	40-49	50-59	60+	Female	Male	MSM[2]	MSM/ IDU	IDU[3]	Hetero-sexual	Perinatal	Blood Products	Other
34	2	0	0	5	19	6	1	1	7	27	13	1	7	9	2	1	1

1 Statistics are based on currently available data and previous data may be subject to change
2 Men who have sex with men (MSM)
3 Injection Drug User (IDU)

Updated September 7, 2007
Office of the Chief Medical Officer